

CLAIMS

Sig A1 1. A method of introducing a compound into a cell that expresses costimulatory molecules, said method comprising contacting the cell with a non-cellular particle that comprises the compound and a costimulatory ligand.

5 2. The method of claim 1 wherein the compound is a nucleic acid molecule or protein.

3. The method of claim 1 wherein the compound is DNA.

Sig A2 4. The method of claim 1 wherein the compound is DNA that comprises a nucleotide sequences that encodes a protein operably linked to regulatory elements functional in the cell.

10 5. The method of claim 1 wherein the compound is DNA that comprises a nucleotide sequences that encodes an immunogenic protein operably linked to regulatory elements functional in the cell.

6. The method of claim 1 wherein the compound is DNA that comprises a nucleotide sequences that encodes a non-immunogenic protein operably linked to regulatory elements 15 functional in the cell.

7. *Op* The method of claim 1 wherein the compound is a viral protein.

Sig A3 8. The method of claim 1 wherein the cell that expresses costimulatory molecules is a dendritic cell or a macrophage cell

9. The method of claim 1 wherein the costimulatory ligand is an antibody or a native 20 ligand of a costimulatory molecule.

Sul B3 ▶ 10. The method of claim 1 wherein the costimulatory ligand is a fusion protein that includes a costimulatory ligand portion and a viral protein portion.

11. The method of claim 1 wherein the particle is a viral particle, a protein complex, a liposome or a cationic amphiphile/DNA complex.

5 12. A method of introducing a compound into a cell comprising contacting the cell with a particle that comprises the compound and a fusion protein, the fusion protein comprising the extracellular region of CD28 and the transmembrane and cytoplasmic regions of HIV-1 gp41.

Sul A4 ▶ 10 13. A method of delivering a therapeutic protein an individual comprising the step of administering to tissue of said individual at a site on said individual's body, a particle that comprises therapeutic protein or a nucleic acid molecule that encodes a therapeutic protein, and costimulatory ligand.

14. The method of claim 13 wherein the particle contains a non-immunogenic therapeutic protein or a DNA molecule that encodes an non-immunogenic therapeutic protein.

15. The method of claim 13 wherein the particle contains a growth factor or cytokine or a DNA molecule that encodes a growth factor or cytokine.

16. The method of claim 13 wherein the particle is a viral particle, a protein complex, a liposome or a cationic amphiphile/DNA complex.

20 17. A method of immunizing against cancer comprising administering to an individual, a cancer cell comprising a recombinant expression vector that encodes a costimulatory ligand.

18. A particle that comprises a compound and a costimulatory ligand.

19. The particle of claim 18 which the costimulatory ligand is a fusion protein comprising the extracellular region of CD28 and the transmembrane and cytoplasmic regions of HIV-1 gp41.

5 20. The particle of claim 18 wherein the compound is an nucleic acid or protein.

21. The particle of claim 18 wherein the compound is DNA.

22. The particle of claim 18 wherein the compound is DNA that comprises a nucleotide sequences that encodes an immunogenic protein operably linked to regulatory elements functional in the cell.

10 23. The particle of claim 18 wherein the compound is DNA that comprises a nucleotide sequences that encodes an non-immunogenic protein operably linked to regulatory elements functional in the cell.

24. The particle of claim 18 wherein the particle is a viral particle, a protein complex, a liposome or a cationic amphiphile/DNA complex.

15 25. A cancer cell comprising a recombinant expression vector that encodes a costimulatory ligand.

26. A method of immunizing an individual comprising the steps of administering to tissue of said individual at a site on said individual's body, a DNA molecule that comprises a nucleotide sequence that encodes an immunogenic protein operably linked to regulatory elements, subsequently administering to said individual a particle that comprises an immunogenic protein.

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27. The method of claim 26 wherein said particle further comprises a compound.
28. The method of claim 27 wherein the compound is a nucleic acid molecule.
29. The method of claim 28 wherein the compound is DNA.
30. The method of claim 29 wherein the compound is DNA that comprises a nucleotide sequence that encodes an immunogenic protein operably linked to regulatory elements functional in the cell.
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31. The method of claim 26 wherein the particle is a viral particle or a protein complex.